## Proposed Decision Tree to Distinguish Synthetic and Non-Synthetic Substances

## Underlined items are defined here: Substance: An element, molecular species, or Start with a chemical mixture that possesses a distinct identity <u>substance</u> (e.g., having a separate Chemical Abstracts Service (not on National List) (CAS) number, Codex International Numbering System (INS) number, or FDA or other agency standard of identity). Natural source: Naturally occurring mineral, plant, or Is the substance animal matter used to obtain non-synthetic inputs for Is the substance produced by a naturally organic production or handling. derived from a NO NO occurring biological natural source? process? Naturally occurring biological process: Chemical Substance is changes that occur in living cells or due to the action synthetic of products of living organisms, such as enzymes. **Extraction**: The removal of a substance from a YES natural source by any chemical (e.g., solvent YES extraction, chemical precipitation) or physical (e.g., mechanical pressure, centrifugation, heating) manner and with any substance. Formulation (manufacturing): The manufacture of an Does extraction of the Non-synthetic agricultural or handling input that is derived from a raw material is substance from its source NO substance extracted from a natural source or by chemical or physical used in its produced by a naturally occurring biological process. methods occur? entirety Formulation is a synonym for manufacturing as the term is used in the OFPA definition of "synthetic." YES **EXTRACTION** Non-synthetic Is formulation needed substance ready to produce an agricultural or After the process of extraction is for processing or handling input? complete: use NO to all (1) Has the substance been transformed into a different substance via a chemical change (excepting YES substances formed via a naturallyoccurring biological process)? **FORMULATION** (2) Has the substance been altered into a chemical form that does not occur in nature? After the process of formulation is (3) Are any important functional complete: properties of the substance altered by process? (1) Does the substance contain any synthetic substances not on the National (4) Does the substance contain a List? significant level of a synthetic substance not on the National List? (2) Has the substance been Substance is NO to alltransformed into a different substance non-synthetic via a chemical change (excepting YES to any of these four questions substances formed via a naturallyoccurring biological process)? PROCESSING OR Substance is (3) Are any important functional USE. synthetic properties of the substance altered by as appropriate process? YES to any of these three questions Substance is synthetic

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